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ABSTRACT

In a single case study which incorporated a reversal within a multiple-baseline-across-subjects design, two women presented individual children (N=3) with eight natural-appearing opportunities to behave prosocially in each session (two opportunities each of helping, sharing, teaching, and sympathy). The training procedure involved a standardized package consisting of modeling, an instructional prompt, and praise. Results indicated that during four training sessions, all children increased their rate of prosocial responding over baseline levels. A reversal session dropped the average level of responding from 91% to 54%. On the fifth and final training session, all children responded on 100% of the prosocial opportunities. A final two days of baseline produced a gradual return to the original pretraining levels in two subjects, but the third subject continued to respond on 75% of the prosocial opportunities through the final baseline session. These results demonstrate the efficacy of a technique for reliably increasing the prosocial behavior of young children. It is straightforward and simple to administer in natural situations such as home and school. Adults can take advantage of naturally-occurring opportunities to demonstrate, prompt, and reinforce children's sharing, helping, teaching and sympathetic behavior. (Author)

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Training Prosocial Behavior in Preschool Children

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Training Prosocial Behavior in Preschool Children

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Surprisingly little is known about the development of prosocial behaviors (e.g., helping, sharing) in preschool children. Investigators have typically used older subjects in somewhat contrived laboratory situations (e.g., donating to an unseen needy child) and focused largely on momentary fluctuations in altruistic responding. Few studies have examined the long-term process whereby prosocial behavior originates and is maintained in the very young child. The present experiment was designed to demonstrate the effectiveness of social learning procedures (a combination, or package consisting of modeling, instructional prompts, and praise) in increasing the prosocial behavior of preschool children.

The particular training procedures used in the present study were chosen for their maximal likelihood of producing a training effect and for their ease of applicability in the natural settings of home or school. Of the various socialization processes which could conceivably be used in moral education, the role of modeling has been the most extensively studied. By now there is ample evidence that exposure to an altruistic model can increase subsequent altruistic responding, at least in the older child (see reviews by Bar-Tal, 1976; Rushton, 1976). Nevertheless, at least one recent study within the operant framework has shown that with preschool children, modeling alone is largely ineffective in increasing sharing rates above baseline levels (Rogers-Warren & Baer, 1976).

However, modeling as part of a package which included reinforcement for reports of sharing did result in increases in the target behavior. Similarly, Cooke and Apolloni (1976) found that a package of procedures composed of modeling, instructions, and praise was effective in increasing the rates of smiling, sharing, verbal complimenting, and positive physical contacting (e.g., hugging) in school-age children diagnosed as "learning disabled." It would seem that modeling is an important part of the training program for the younger child. Not only does observation of an altruistic model provide information about the appropriateness or acceptability of the behavior (Bryan and London, 1970), but for the very young child, for whom prosocial responding may not be firmly established in the behavioral repertoire, modeling may transmit information about the topography of the response as well.

The other components of the training package in the present study deserve mention. The use of instructional prompts heightens the probability that the child will engage in the behavior which can then be reinforced by praise. For example, in one study of the donation rates of kindergarten and first-grade children, some children responded to an instructional prompt alone, whereas others required the addition of social praise to maintain a high rate of donating behavior (Gelfand, Hartmann, Cromer, Smith, & Page, 1975).

The present investigation sought to increase four prosocial behaviors: helping, sharing, sympathy, and teaching. Helping and sharing have been extensively investigated, at least with school-age children, but little is known about the development of comforting or information-giving behavior. Staub (1975) has suggested that teaching, regardless of content,

is a form of prosocial behavior, and this position was adopted in the present study. Sympathy, or the offering of comfort or condolence to another, is the least understood of the four target behaviors investigated here. In an ambitious study and one of the few attempts to investigate the long-term process by which children acquire sympathetic and helpful responses, Yarrow, Scott, and Waxler (1973) found that children who had a history of interaction with a nurturant caregiver and who had been given training on four real life distress incidents (e.g., sympathizing with an adult who "accidentally" bumped her head) were the most helpful and sympathetic when measured two weeks later in naturalistic situations. The training procedure in the live distress situations, although not described in detail, apparently involved modeling and vicarious reinforcement. Unfortunately, however, in this study all children who received the training in real life sympathy, sharing, and helping behavior had received extensive prior training using symbolic media (i.e., pictures and dioramas). Thus the effect of the realistic training alone could not be assessed.

In the present experiment, an attempt was made to systematically increase the children's rates of helping, sharing, teaching, and sympathy in response to natural-appearing opportunities to behave prosocially, presented by two experimenters in a context of friendly interaction and play on some activity. The study also investigated the extent to which the trained subjects maintained their performance levels in the absence of the training program.

Method

Subjects and Setting

Three preschool children enrolled at the Helen Gordon Child Development Center at Portland State University served as subjects. These children were drawn from a larger pool of seven children, ranging in age from 3 yr two months to 5 yr two months ($\bar{X}$ age = 4 yr 3 months). The three subjects (Karen, Emily, and Jack, ages 3 yr eight months, 4 yr eleven months, and 3 yr eleven months, respectively) were those children who, on the basis of baseline observations, exhibited the lowest rates of the four prosocial responses targeted in the study.

The research was conducted between 8:30 and 10:00 a.m. in a large playroom located near the classrooms of the subjects. During the sessions, the subject was seated at a small table, and had access to art materials and toys provided by the experimenters. Nearby were trunks for storage of materials, a hamster cage with hamster, plants on a window sill, and colorful posters on the wall.

Procedure

In sessions lasting 25-40 minutes 1-4 days apart, individual children were brought to the experimental room where they interacted with two experimenters, both women undergraduates in their mid-twenties. In each session, eight opportunities for the child to respond prosocially (two opportunities each of helping, sharing, teaching, and sympathy) were embedded into a stream of events involving friendly interaction with the adults and play on some activity, such as playdough or fingerpainting. Effort was made to introduce the prosocial opportunities as naturally as possible into the ongoing

situation by taking advantage of materials or the activity at hand. Thus, for example, if the activity were playing with a game of Lotto, the child would be presented with an opportunity to share his Lotto cards, to help pick up cards which the experimenter had accidentally dropped, to teach the experimenter how to play Lotto, and to sympathize with the experimenter when she accidentally bumped her head while reaching for the game. The various experimentally-devised opportunities for the child to behave prosocially and their temporal order within each session are listed in Table 1.

Insert Table 1 about here

As can be seen from Table 1, the prosocial opportunities varied both within and across sessions for all response categories except sympathy, which, for reasons outlined below, was not varied within a given session. The temporal order of presentation of prosocial opportunities within each session was the same for all subjects, as was the activity for each session (i.e., all subjects played Lotto on Session 1, made handprint turkeys on Session 2, etc.). The assignment of activities to sessions was made on a random basis before the experiment began. In pilot sessions, the prosocial opportunities within each session were tested so as to insure that they evoked approximately equal frequencies of prosocial reactions within each response category (i.e., helping, sharing, teaching, or sympathy). Twenty-four children in the child care center the previous quarter served as the pretest sample.

The eight prosocial opportunities within a session were introduced by means of a verbalization of need, in which the experimenter identifed the situation as one in which a prosocial response could be made. There was a standardized verbalization of need for each of the four target behaviors. For

example, the verbalization of need signalling a sharing opportunity indicated the experimenter's desire for an object or material in the child's possession (e.g., "I'd like to paint a picture, but I don't have any red paint"; "I really like cheese crackers, but I don't have any"). The verbalization of need signalling an opportunity to help included a brief statement of the problem together with a possible solution (e.g., "Oh, I've dropped the Lotto cards. They need to be picked up"; "I've lost my earring. It needs to be found"; "The table is covered with dirt. It needs to be cleaned up"). The experimenter's verbalization of need signalling a teaching opportunity indicated that she did not know how to do something (e.g., "I don't know how to do a handprint turkey"; "I don't know how to make colored playdough"). In order to control for differential learning histories or skill levels, in the teaching opportunities the child was always asked to demonstrate a simple skill or impart information which he or she had just learned from the second experimenter. Finally, an opportunity to sympathize was signalled when the experimenter pretended to sustain an injury and evidence mild distress, with appropriate nonverbal cues (e.g., "Oh, I bumped my head on the shelf"; "Oh, I stubbed my toe on the door"). The types of injuries sustained were varied from session to session, but for purposes of credibility, remained the same within a particular session. Thus the second verbalization of need for sympathy within any given session was always a restatement of the original problem (e.g., "Oh, I really must have bumped my head on that shelf. It still hurts").

In baseline sessions, the verbalizations of need were always presented by one experimenter while the second experimenter had temporarily left the room. Thus, the subject was never exposed to a model of inaction or nonintervention by the other adult. If the child did not respond prosocially within

seven seconds following the standardized need verbalizations, the experimenter made no comment and play was resumed as before, with the re-entry of the second experimenter shortly thereafter.

Seven children were seen in two baseline sessions (Sessions 1 and 2, as described in Table 1). The three children who showed the lowest rates of prosocial responding in these sessions were selected to receive training in prosocial responding. In training sessions, a combination of modeling and instructional prompts, plus verbal praise contingent on appropriate behaviors, was employed to increase the subjects' rate of prosocial responding. In these sessions, both adults remained in the room as the experimenter presented the standardized verbalization of need. If the child did not respond prosocially within seven seconds, the second experimenter modeled the prosocial response. Modeling of the prosocial response always consisted of the adult's performance of the response, specifying her behavior with the use of the appropriate labels share, help, teach, and sorry, respectively (e.g., "Here, I'll share some of my cookies with you"; "I'll help you pick up the cards"; "I'll teach you how to make colored playdough"; "I'm sorry you bumped your head. It will feel better soon").

If the child did not join in the prosocial activity within seven seconds of the presentation of the model, the second experimenter suggested to the child that he or she perform the prosocial response. This instructional prompt always included an inductive statement such as "It would be good of you to ..." or "It would be very nice if you ..." together with the use of the appropriate words help, share, teach, and sorry, respectively (e.g., "It would be nice of you to share some of your crackers too"; "It would be good of you to help pick up the cards"; "(Child's name), you know how to make colored playdough, too. It would be nice of you to teach her how you

do it"; "It would be good of you to tell her you're sorry she bumped her head"). If the child did not comply with the instructional prompt within seven seconds, no comment was made and play simply resumed as before. If the child complied, the second experimenter praised him or her. Praise always included a specification of the behavior being praised, a label of the child's prosocial behavior as nice or good, and an explanation which focused on the consequences of the child's behavior for other people (e.g., "It was very nice of you to share your crackers. Now we all have something to eat": "That was really good of you to help pick up the cards. We finished picking them up much faster that way"; "It was good that you taught her to make colored playdough. Now we all know how"; "That was very nice of you to tell her you're sorry about her head. I'm sure she feels much better").

Occasionally a child provided an unexpected prosocial response (e.g., the child helped when the need verbalized was for teaching, or shared when the need verbalized was for helping). In this case, the behavior was praised if the experimenter judged that it met the operational definition of the corresponding behavior.

Behavioral Definitions

The behaviors recorded for the subjects were sharing, helping, teaching, and sympathy. Requests made by the subjects for sharing, helping, teaching, and sympathy were also recorded, but these events occurred so infrequently that they were not scored. One experimenter behavior, praise, was also recorded.

Sharing. The child gave an object to the adult which had been in the child's current possession or use. Observers noted whether a verbal offer to share accompanied the act of sharing.

Helping. The child assisted in a task which is better or more quickly

done by more than one person. Those behaviors scored as helping were looking for a lost object (subject must search for 4 seconds or more), picking up objects which had dropped to the floor, moving objects from one place to another, and clearing objects or materials from the table. Note was made of any verbalizations which accompanied the physical act of helping.

Teaching. The child instructed the adult in a skill or activity. The instruction could be through physical demonstration or verbal explanation as long as the child gave the adult information which enabled her to continue or complete an activity.

Sympathy. The child offered comfort or condolence, or expressed concern about the adult's condition. Verbal expressions scored as sympathy included "It's alright," "Sorry, I know your're hurt," "It's okay," "I bet it hurts," and "It'll get better." Physical demonstrations of sympathy included extending a hand or arm toward the injured adult and patting, stroking, or hugging in a positive manner.

Praise. The experimenter indicated to the subject that she approved of the prosocial behavior. To be scored as praise, the verbalization must have included a specification of the behavior being praised, a label of the behavior as nice or good, and an explanation which focussed on the consequences of the child's behavior for other people.

Observational System, Recording Procedures, and Reliability

Two observers with clipboards and data sheets recorded child and experimenter behaviors in each session. The observers had been trained in systematic observational methodology and the present observation code using videotapes before the start of the experiment, but were unaware of the purposes of the study.

For each session, the observer recorded an abbreviated version of the verbalization of need next to an incident number which indicated the temporal

order of presentation of the prosocial opportunities. Since there were eight verbalizations of need per session, these incident numbers ranged from 1 to 8. The observer recorded an instance of prosocial behavior by the child in that interval by writing this number in one of 12 cells on a data sheet formed by the intersection of 3 rows and 4 columns. The columns were labeled sharing, helping, teaching, and sympathy, respectively, and the rows indicated the point in the training sequence at which the prosocial behavior occurred, i.e., after the need verbalization, after the modeling or after the prompt. If the child did not respond prosocially to the need verbalization (or after the model or prompt during training), the observers marked NR (for no response) after the incident number. Other responses by the child which did not meet the operational definition of the corresponding behavior (e.g., a helping opportunity in which the child tells the adult to pick up the Lotto cards herself) were also scored as NR. Experimenter praise was indicated by the symbol P following the incident number.

For purposes of assessing reliability, an agreement was scored only when both observers marked the same events in the same column in the same row. Any unexpected prosocial responses (e.g., helping when the need verbalized was for teaching) were scored as prosocial responses if they met the operational definitions of the corresponding behaviors. Observers were instructed to note the unexpected prosocial behavior, and, for purposes of reliability, an agreement was scored only if both observers placed the behavior in the same response category (i.e., sharing, helping, teaching, or sympathy).

Experimental Design

The study employed a combination of a reversal and multiple-baseline

design. The five stages of the reversal design were:

Baseline I. No prosocial model, instructional prompt, or praise was given to the child for behaving prosocially. Baseline I was the only phase of the experiment in which the number of sessions varied across subjects, i.e., Baseline I consisted of two sessions for Karen, four sessions for Emily, and five sessions for Jack. The determination of which subjects received the greater number of Baseline I sessions was made on a random basis following session 2.

Training I. The experimental agents implemented the training procedures described above. The purpose of this stage was to increase and maintain an increased frequency of prosocial behavior for each subject. There were four Training I sessions for all subjects.

Baseline II. This session involved a return to conditions operating during Baseline I, in which no modeling, prompting, or reinforcement for prosocial behaviors was provided by the experimenters.

Training II. In this session, training procedures were reintroduced in an effort to once again increase the frequency of prosocial responding for each subject.

Baseline III. These final two sessions involved a return to conditions operating during the previous baseline sessions.

Results

Reliability, computed by means of phi coefficients, was as follows: helping, 87%, sharing 92%, teaching 82%, sympathy 91%, and praise 99%.

Figure 1 presents the number of prosocial behaviors in response to the experimentally-devised prosocial opportunities for Karen, Emily, and Jack across all experimental conditions and response categories. The differences

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Insert Figure 1 About Here

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in responding within the sharing, helping, teaching, and sympathy categories are described below.

During Baseline I, the subjects engaged infrequently in prosocial behavior when presented with the eight prosocial opportunities in each session. For example, Karen made only one prosocial response, sharing, in each of her two Baseline I sessions. Likewise, Emily responded prosocially only once or twice in each of her four Baseline I sessions. Her responses during baseline showed a similar rate of one or two responses per session until the fifth and final Baseline I session, when he responded prosocially on three of the eight opportunities. His responses in the earlier sessions were invariably teaching responses. In each of the latter two sessions a sharing response was added to the teaching, and in the last session, a sympathetic response was displayed when he unexpectedly announced that he would get a bandaid (for an injured eye!) and "it will get better."

As Figure 1 indicates, the addition of experimenter modeling, prompting, and praise on the first Training I session immediately increased the prosocial responding of each subject, and this increase was maintained throughout the four-session Training I phase. For example, on her first day of training Karen responded to seven of the eight prosocial opportunities, missing only a sympathetic response. On the second day of training, she responded on all eight occasions. On the last two Training I sessions, only one response was lacking in each session, a teaching response. Emily behaved prosocially on all opportunities throughout the four day Training I phase except for a failure to sympathize on the first day of training. Jack likewise exhibited an increase in number of prosocial behaviors in response to the training,

failing only to teach on sessions 6, 7, and 9.

When experimenter modeling, prompting, and reinforcement was withdrawn during the Baseline II session, each subject's prosocial behaviors decreased to an intermediate level, with Karen responding prosocially on five occasions and Emily and Jack on four occasions. The response most likely to be omitted during this session was sympathy. Both Karen and Emily failed to sympathize at all, but Jack responded sympathetically on one of the two sympathy need verbalizations.

The resumption of modeling, prompting, and reinforcement during the Training II session, which for all subjects was the fifth and final training day, produced maximal responding in each subject, i.e., all subjects behaved prosocially on eight of the eight prosocial opportunities.

When training stopped in the final Baseline III phase, prosocial behavior was again somewhat reduced, and by the second Baseline III session had returned to pretraining levels for two of the three subjects. Karen, however, continued to respond to all prosocial opportunities except sympathy on both of the Baseline III sessions. Amy showed a decrease in prosocial behavior over the final two baseline sessions, with no apparent pattern in the data or relationship to her earlier responses except for consistent failures to respond sympathetically. Jack was the only subject to sympathize during this final baseline phase, but even this response, which was displayed on Session 12, had disappeared by the last session. As with Amy, the prosocial responses which Jack did produce showed no apparent pattern across the two Baseline III sessions or relationship to his responses in the earlier baseline phases.

Discussion

The present study demonstrated that a training package consisting of modeling, instructional prompts, and praise was effective in increasing the prosocial behaviors of children who evidenced initially low rates of such behaviors.

During its application, the training package did not appear to be differentially effective in producing a change in behavior across the four response categories of helping, sharing, teaching, and sympathy. However, upon removal of the training procedures during the Baseline II and Baseline III phases, the response most likely to disappear was sympathy. In fact, Jack, the one subject who did sympathize during these post-training baseline sessions, had already displayed this behavior once during Baseline I; thus it is not evident that the training was responsible for his sympathetic responses in the latter sessions. Rather, it appears that Jack already had sympathy in his repertoire prior to the beginning of the experiment. Perhaps the increased amount of interaction with the experimenters which Jack received as a result of his five Baseline I sessions helps account for his early display of sympathy. Although nurturance was not systematically measured in the present study (other than in the record, during training sessions, of praise), the context of the sessions was clearly positive, the children came willingly and appeared to enjoy the individualized attention. The effect of nurturance on prosocial behavior is unclear, but there is at least one study (Staub, 1971) which showed that children with a prior history of nurturant interaction with an adult were more likely to respond to the distress cues of another individual.

children performed at an intermediate level on those baseline sessions immediately following training days (i.e., the Baseline II session and the first session of Baseline III), indicating a short-term generalization effect. However, by the final session of Baseline III only one of the three subjects was responding at a rate which was substantially above her pretraining level. Bandura (1977) has commented on the difficulty in achieving generalized enduring changes when the activities reinforced are primarily for the benefit of other people. According to this view, behaviors such as those investigated in the present study, which by definition involve some cost to the actor, must be provided with rewarding supports on a continuing basis. Our training procedures, though potent in their immediate effect, may need to be carried out longer than five days for enduring behavior changes to be noted.

The prosocial opportunities were simulated in the present experiment. What was necessary for the demonstration of systematic control within the telescoped time frame of the laboratory, however, becomes superflous in the real situation; e.g., minor distresses (and the corresponding opportunity to comfort or give aid) happen often enough on their own. But so do opportunities to demonstrate, prompt, and praise sharing, helping, and teaching behaviors. In natural child-rearing contexts, it may be difficult or more time-consuming to involve the child in the helpful activity. (Our young children's attempts to demonstrate how to stir chocolate pudding with a wire whip, for example, might not be tolerated too long in the real world.) Nevertheless, the results of the present study suggest that caregivers who choose to take advantage of naturally occurring opportunities can promote an increase in their child's prosocial behavior.

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Table 1

Experimentally-devised Prosocial Opportunities in Each Session

Session 1 (Lotto)	Session 5 (Planting seeds)
Teach how to water plants	Help pick up spilled cups
Help pick up dropped Lotto cards	Teach how to plant seeds
Share cards	Share spoons
Teach how to play Lotto	Sympathize about dirt in eye
Sympathize about bumped head	Teach how to make drainage holes
Help look for lost card	Share watering can
Sympathize about bumped head	Sympathize about dirt in eye
Share Cheese crackers	Help clean dirt off of table
Session 2 (Handprint turkeys)	Session 6 (Macaroni plates)
Help move pans to trunk	Help pick up spilled macaroni
Teach how to unlock trunk	Teach how to make macaroni plates
Sympathize about smashed finger	Share buttons
Teach how to make handprint turkey	Share macaroni
Share magic markers	Sympathize about pricked finger
Sympathize about smashed finger	Sympathize about pricked finger
Share cookie cutters	Teach how to hang plate
Help hang up turkey	Help clean materials from table
Session 3 (Litterbags)	Session 7 (Sesame Street puzzle)
Teach how to use viewmaster	Teach how to open door of hamster cage
Help move materials to table	Help pick up dropped puzzle pieces
Help move chairs to table	Help move table
Teach how to make litterbags	Sympathize about hurt leg
Sympathize about bumped knee	Teach how to put small pieces together
Share scissors	Share puzzle pieces
Sympathize about bumped knee	Sympathize about hurt leg
Share glue	Share donuts
Session 4 (Balloon people)	Session 8 (Leafprints)
Sympathize about sprained finger	Help move trunks
Help tie balloon	Sympathize about hurt foot
Teach how to glue face on balloon	Teach how to make leafprints
Sympathize about sprained finger	Share big leaves
Share paper eyes	Sympathize about hurt foot
Share pieces of yarn	Help look for lost crayon
Teach how to put yarn hair on balloon	Teach how to attach paper butterfly to leafprint with gold clip
Help look for lost watch	Share gold clips

Table 1 (continued)

Experimentally-devised Prosocial Opportunities in Each Session

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Session 9 (Playdough cookies)
Help put hamster food dishes in cage
Share playdough
Teach how to make food-colored playdough
Teach how to make playdough cookies
Sympathize about hurt hand
Share rolling pin
Sympathize about hurt hand
Help clean playdough from table

Session 10 (Fingerpainting)
Teach how to make popbead crown
Help pick up spilled sticks
Sympathize about hurt head
Teach how to make green paint
Share paints
Share tracing designs
Sympathize about hurt head
Help find lost glasses

Session 11 (Candyland)
Help move records from table
Sympathize about stubbed toe
Teach how to make paper airplane
Help pick up dropped game markers
Teach how to play Candyland
Share game markers
Sympathize about stubbed toe
Share frosted animal cookies

Session 12 (Making Pudding)
Sympathize about bumped elbow
Help hang up poster
Teach how to use etch-a-sketch
Teach how to stir with wire whip
Share napkins
Sympathize about bumped elbow
Share cups
Help look for lost earring

Session 13 (Tinker Toy Superman)
Help pull lid from Tinker Toy box
Teach how to use round pieces
Share round pieces
Sympathize about smashed nose
Teach how to make superman's cape
Sympathize about smashed nose
Help look for lost toy box
Share cape material

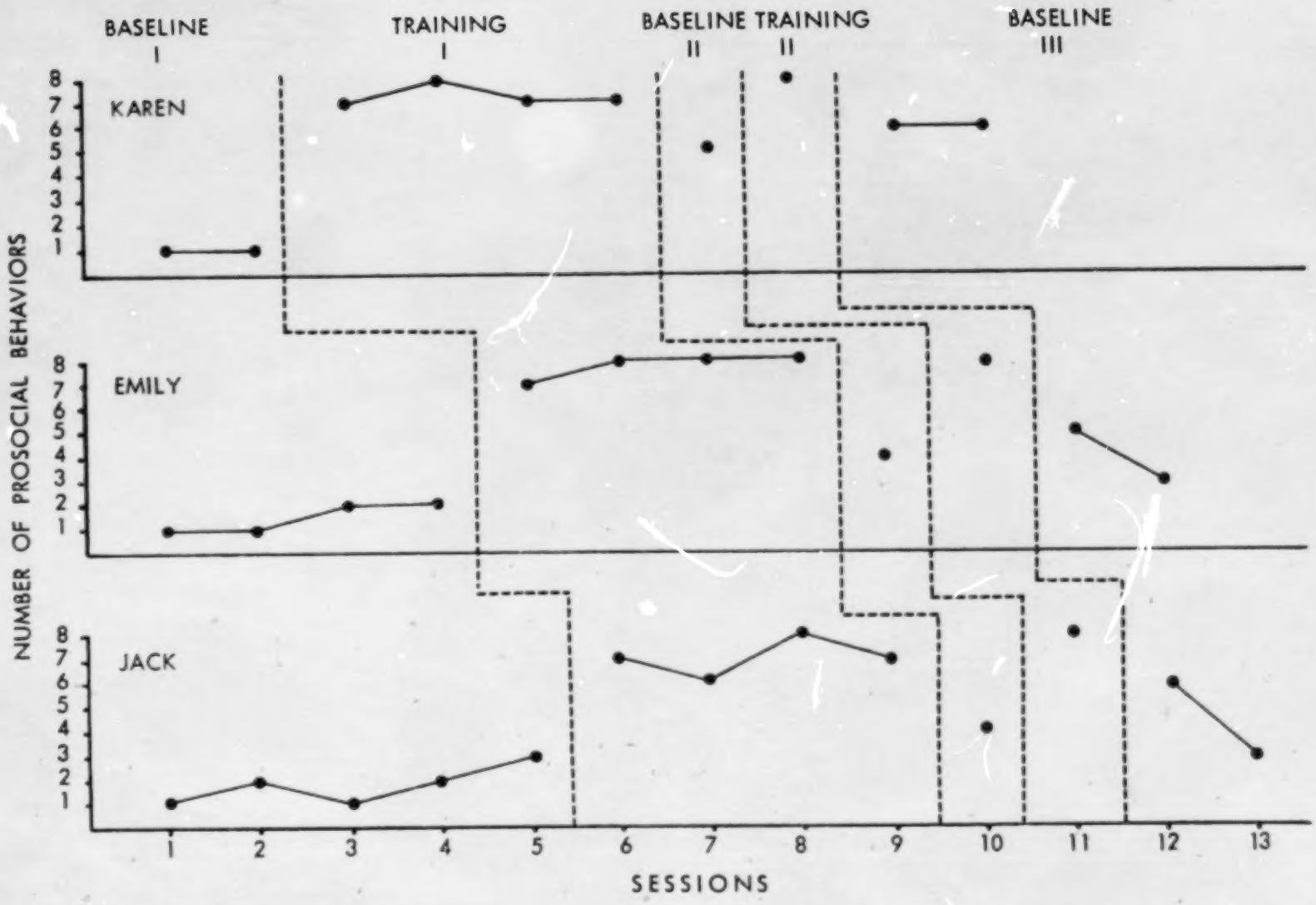

Fig. 1. Number of prosocial behaviors in response to experimentally-devised prosocial opportunities for Karen, Emily, and Jack across all experimental conditions and response categories.